

KREMENTULO, V.V. (Moskva); MARKHASHOV, L.M. (Moskva)

Evaluating the deviation of a balanced gyroscope in gimbals.

Inzh.sbir. 1 no.4:3-5 '61.

(MIRA 15:4)

1. Institut mekhaniki AN SSSR.

(Gyroscope--Testing)

MARKHASHOV, L.M.

28499
S/040/61/025/002/010/022
D201/D302

N.3400

AUTHOR: Markhashov, L.M. (Moscow)

TITLE: On the critical cases of stability in Lyapunov stationary motion

PERIODICAL: Prikladnaya matematika i mekhanika, v. 25, no. 2, 1961, 265 - 275

TEXT: A system of differential equations

$$\frac{dx^i}{dt} = X^i(a, x) \quad (i = 1, \dots, n) \quad (1.1)$$

is considered, where the functions $X^i(a, x)$ do not depend explicitly on t , and are holomorphic with respect to the variables x^j in a sufficiently small neighborhood H of the point $x^1 = \dots = x^n = 0$

$$X^i(a, x) = \sum_{j=1}^{\infty} q_j^i(a, x)$$

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On the critical cases of ...

In the homogeneous forms $s > 1$

$$q_s^1(a, x) = a_{1_1}^1 \dots i_s x^{11} \dots x^1 s$$

the summation indices take independently of each other all values from 1 to m . The coefficients $a_{1_1}^1 \dots i_s$ are symmetric with re-

spect to the lower indices. If m is an arbitrary fixed natural number, then, by definition

$$P_m^1(a, x) = \sum_{s=1}^m q_s^1(a, x), \quad R_m^1(a, x) = \sum_{s=m+1}^{\infty} q_s^1(a, x)$$

In this article certain statements are formulated, concerning the conditions satisfied by the coefficients $a_{1_1}^1, \dots, a_{1_1}^1, \dots, i_m$

of the polynomial $P_m^1(a, x)$ when the system of equations in the m -th approximation is

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$$\frac{dx^1}{dt} = P_n^1(a, x). \quad (1.2)$$

The points of a Euclidean space E_n , of dimensionality n equal to the general number of coefficients a in the function $P_n^1(a, x)$, ($i = 1, \dots, n$). Then

$$E_{n_1} \subset E_{n_2} \subset \dots \subset E_n.$$

It follows that the sets of non-critical points of E_n are not empty. A general analytic transformed coordinate is considered

$$x^i = \varphi^i(x', a) = \sum_{j=1}^n a_{ij}^1 x'^1 \dots x'^n \quad (2.1)$$

$$\frac{\partial(\varphi^1, \dots, \varphi^n)}{\partial(x'^1, \dots, x'^n)} \Big|_{x'=0} = |a_{ij}^1| \neq 0 \quad (2.2)$$

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Hence a neighborhood $h \subset H$ of the point $x = 0$ may be found in which there is a 1 - 1 correspondence between the coordinates x^i and x'^i . Hence for some finite parameter α , (2.2) is equivalent to Lyapunov's stability. Transforming (1.1) gives

$$\frac{dx^i}{dt} = X^i(\alpha', x') \quad (2.3)$$

$$\alpha'^j = f^j(\alpha, \alpha) \quad (2.4)$$

where the f^j are integral rational functions of α and α , such that the $\alpha'^1_1, \dots, \alpha'^1_{1_1}, \dots, i_m$ depend on

$$\alpha^1_1, \dots, \alpha^1_{1_1}, \dots, i_m, \alpha^1_1, \dots, \alpha^1_{1_1}, \dots, i_m$$

and on them only. (2.4) transforms each of the spaces $R_{n_1}, R_{n_2}, \dots$

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into itself, and generates a group. Substituting in (1.1) and transforming gives

$$\sum_{(n_1, \dots, n_k)} \left(\sum_{p=1}^k \mu_{n_1, \dots, n_{p-1}} a_{n_p, \dots, n_k}^p - \right. \quad (3.1)$$

$$\left. - \sum_{p=1}^k \sum_{n_1 + \dots + n_{p-1} = n_p} a_{n_1, \dots, n_{p-1}}^1 \dots a_{n_p, \dots, n_{p-1}+1 \dots n_k}^k \right) = 0$$

(j, δ, n, i = 1, 2, ..., n; k = 1, 2, ...)

Now $a_{\alpha}^j a_j^{\alpha} = \delta_{\alpha}^{\epsilon}$, where $\delta_{\alpha}^{\epsilon}$ is Kronecker's δ. By finding the single-valued solution corresponding to $a_{n_1}^1 \dots a_{n_k}^k$, (2.4) may be written in the form

$$k=1, \quad a_{n_1}^1 = a_1^1 a_{n_1}^1$$

$$k=2, \quad a_{n_1 n_2}^2 = (a_1^1 a_2^1 a_{n_1 n_2}^2 + a_1^1 a_{n_1 n_2}^1 - a_2^2 a_{n_1}^1 - a_{n_1}^2 a_2^1) a_j^2, \dots$$

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Denoting by $\alpha^1, \dots, \alpha^m$, and $\alpha^1, \dots, \alpha^m$ one-dimensional systems of variables $\alpha^j_1, \dots, \alpha^j_{i_1}, \dots, \alpha^j_{i_m}$, and $\alpha^j_1, \dots, \alpha^j_{i_1}, \dots, \alpha^j_{i_m}$ the matrix of the transformation group of the space E_m may be written in the form

$$M_m = \begin{vmatrix} (\alpha^j_1)_1^1 & (\alpha^j_{1i_2})_1^2 & \dots & (\alpha^j_{1\dots i_m})_1^m \\ 0 & (\alpha^j_1)_2^2 & \dots & (\alpha^j_{1\dots i_{m-1}})_2^m \\ \dots & \dots & \dots & \dots \\ 0 & 0 & \dots & (\alpha^j_1)_m^m \end{vmatrix}$$

in which the bloc

$$(\alpha^j_{1\dots i_{k-1}i_{k+1}})_i^k = \left| \left(\frac{\partial \alpha^j_{1\dots i_k}}{\partial \alpha^s_{1\dots i_{k-1}}} \right)_{s=i} \right| \quad (1 \leq k \leq m)$$

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denotes a matrix whose elements are dependent on the α 's having exactly $k - l + 1$ lower indices. The vector matrix M_σ of the transformation group of the space E_{n_σ} ($\sigma \leq n$) is obtained from M_n having as elements of its leading diagonal matrices of rank n_σ . Considering the elements of these matrices leads to the result that the points of E_n are transformed by a transformation group G_{n_σ} ($n \neq 1$) of rank n_σ . The order of this transformation group may be shown to be n_σ ($\sigma \leq n$). Let

$$b_1^{i_1} = f_1^{i_1}(b_1, \beta_1)$$

be the transformations of the group G_{n_1} of the space E_{n_1} with infinitesimal operators

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$$X_{i,j}^1 = \xi_{i,j}^1(b_1) \frac{\partial f}{\partial x_i^1}, \quad \xi_{i,j}^1(b_1) = \left(\frac{\partial f_i^1}{\partial x_i^1} \right)_{x_i^1 = b_i}, \quad (i, j = 1, \dots, n_1)$$

and let the transformations of the space E_{n_2} ($n_2 > n_1$)

$$b_1^{i_1} = f_1^{i_1}(b_1, \beta_1) \quad b_2^{i_2} = f_2^{i_2}(b_1, b_2, \beta_1, \beta_2) \quad \begin{cases} i_1 = 1, \dots, n_1 \\ i_2 = 1, \dots, n_2 - n_1 \end{cases}$$

form a group G_{n_2} with the operators

$$\begin{aligned} X_{i,j}^2 &= \xi_{i,j}^2(b_1) \frac{\partial f}{\partial x_i^2} + \xi_{i,j}^3(b_1) \frac{\partial f}{\partial x_i^3} \\ X_{i,j}^2 &= \xi_{i,j}^2(b_1) \frac{\partial f}{\partial x_i^2} \quad (i, j = 1, \dots, n_2 - n_1) \end{aligned} \quad (4.1)$$

$$\xi_{i,j}^2(b_1) = \left(\frac{\partial f_i^2}{\partial x_i^2} \right)_{x_i^2 = b_i}, \quad \xi_{i,j}^3(b_1) = \left(\frac{\partial f_i^3}{\partial x_i^3} \right)_{x_i^3 = b_i}$$

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Let $\beta = \beta^0$ be the identical transformation and let

$$\left| \xi_{22}^{12}(b_1) \right| \neq 0. \quad (4.2)$$

In general, the rank of $// \xi_{11}^{11} //$ is $r \leq n$. It is evident that all minors of order $n_2 - n_1 + q$ ($q \leq r$) of

$$M(b_1, b_2) = \begin{vmatrix} \xi_{11}^{11}(b_1) & \xi_{12}^{11}(b_1) \\ 0 & \xi_{22}^{11}(b_1) \end{vmatrix}$$

are identically zero. Lemma: Whatever the nature of the point $b_1^*(b_1^{*1}, \dots, b_1^{*n_1})$ of the space E_{n_1} (ordinary - $q = r$, or singular $q < r$) if it is such that by no selection of the parameters β_1^j, β_2^j can the transformation

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$$b_1^{*4} = f_1^4(b_1^-, \beta_1), \quad b_2^{*4} = f_2^4(b_1^-, b_2, \beta_1, \beta_2) \quad (4.4)$$

be carried out, where all $b_2^{i_2}$ are some previously determined numbers, then the coordinates of the point b_1^* necessarily satisfy at least 1 of the relations

$$\begin{aligned} \varphi_{11}^g(b_1) &= \dots = \varphi_{1n}^g(b_1) = 0 \\ \varphi_{21}^g(b_1) &= \dots = \varphi_{2n}^g(b_1) = 0 \end{aligned} \quad (4.5)$$

The following definition is introduced: The order of a critical point of the space E_n is a natural number p_n such that $p_n > n+1$

1) the stability (instability) of the trivial solution of the system (1.1) is preserved, whatever the coefficients a of the forms $q_m^1(a, x)$ ($m = m+1, \dots, p_m - 1$) may be; 2) by changing the coefficient

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icients of the forms $q_{p_m}^i(c, x)$ the stability (instability) of the solution of (1.1) may be obtained at will. Theorem: If the point $(\alpha_1^j, \dots, \alpha_{1 \dots i_m}^j)$ of the space E_{N_m} is critical, then its coordinates necessarily satisfy at least one of the relations (4.5). In conclusion, the author thanks N.N. Krasovskiy for his assistance. There are 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: M. Bocher, Introduction to higher algebra. Macmillan, N.Y., 1907.

SUBMITTED: January 20, 1961

Card 11/11

J

45287

S/207/62/000/006/013/025
E031/E492

AUTHOR: Markhashov, L.M. (Moscow)

TITLE: The oscillations and stability of an elastically supported rigid shell containing an ideal fluid
(On the theory of carousel hydrochannels)

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki,
no.6, 1962, 81-84

TEXT: A heavy vessel, with a circular cylindrical cavity partially filled with a homogeneous ideal incompressible fluid, rotating with constant angular velocity ω about the axis of symmetry of the cavity is considered. The axis is under the influence of an elastic force proportional to the distance between the axis and some fixed vertical axis. The shell moves along the vertical axis so that sections orthogonal to both axes execute approximately two-dimensional motion. In the undisturbed motion the fluid is at rest with respect to a set of coordinates rotating with angular velocity ω which is so large that the free surface of the fluid can be assumed to be cylindrical. If the vertical component of the fluid velocity is not disturbed, the problem is reduced to the determination of the small movements of the system

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The oscillations ...

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in the horizontal plane containing the centre of mass of the shell. From the equations of motion of the fluid approximate expressions can be obtained for the velocity u and the pressure p^* where

$$p^* = p - \frac{\rho\omega^2}{2} r^2 + \rho r (-\delta^0 \omega^2 \cos \theta + \psi_1 \cos \theta + \psi_2 \sin \theta) \quad (1.4)$$

$$\psi_1 = \xi - \omega^2 \xi - 2\omega \delta^0 \eta, \quad \psi_2 = 2\omega \xi + \delta^0 (\ddot{\eta} - \omega^2 \eta)$$

(r, θ - moving polar coordinates, ξ and η - small disturbances to δ and ψ polar coordinates in the horizontal plane; superscript 0 indicates undisturbed values). From the determinantal equation for the frequencies of free oscillations of the fluid surface it follows that, beginning with the second harmonic in θ , the frequencies are independent of the motion of the shell (assuming the oscillations to be small). The special case when the centre of mass of the shell lies at the origin of coordinates is also considered. In the above and the more general case the stability of the shell-fluid system does not depend on the amount of fluid. It is only required that the volume of fluid be such that the radius of the free surface is not vanishingly small and that the free surface does not touch the sides of the cavity.

Card 2/2

SUBMITTED: August 18, 1962

MARKHASHOV, L.M. (Moscow)

"The application of the Lie group theory to some algebraic problems of stability and automatic control".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

L 57050-65 EEO-2/EWT(d)/FSS-2/EEC(k)-2/EWG(v)/EEC-4/EED-2/EWA(c) Pn-4/Po-4/Pn-4/
Pe-5/Pq-4/Pg-4/Fk-4/P1-4 BC
ACCESSION NR: AP5018533

UR/C258/64/004/003/0427/0430

AUTHOR: Markhashov, L. M. (Moscow)

TITLE: Gyroscope with precision angle stabilization

SOURCE: Inzhenernyy zhurnal, v. 4. no. 3, 1964, 427-430

TOPIC TAGS: gyroscope component, navigation equipment, gyroscope system

ABSTRACT: The present-day need for the increase in accuracy of gyroscopic devices by two orders of magnitude demands gyroscopic designs utilizing new physical principles (see, e.g., B. I. FILIPPOVICH, D. Ya. LIBENSON, Izv. AN SSSR, otd. tekhn. n., Energetika i Avtomatika, No 4, 1962). However, the accuracy of highly sensitive physical instruments depends also on the stability of their supports. Consequently, the author studied the feasibility of a device which, in addition to being a converter of orientations, would simultaneously stabilize the motion of the gyroscope with

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ACCESSION NR: AP5018533

respect to all the coordinates and velocities. The gyroscope is within a universal joint and the correcting mechanism is based either on interference of light or on the constancy of its plane of polarization. In both cases, the information about the true angle of rotation ψ' of the external supporting ring with respect to an inertial frame, supplied by the correcting automation, is transformed by a servomotor into a moment $M(\psi, \psi_0)$ applied to the outer ring of the universal joint. The sensitivity depends on the path length of the light rays, and in a small-size instrument a long path can be materialized by means of multiple reflections. Losses in light intensity may be compensated by means of laser amplifiers.

ASSOCIATION: Institut mekhaniki AN SSSR (Institute of Mechanics AN SSSR)

SUBMITTED: 14Jan64

ENCL: 00

SUB CODE: NG

NR REF, SOV: 007

OTHER: 000

JPRS

10
Card 2/2

ACCESSION NR: APL027582

S/0040/64/028/002/0221/0231

AUTHOR: Markhashov, L. M. (Moscow)

TITLE: Group classification of algebraic equations according to properties of their roots

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 2, 1964, 221-231

TOPIC TAGS: algebraic equation, algebraic equation root, mathematical group, automatic regulation, mathematical invariance, Lie group, Hurwitz condition

ABSTRACT: The author studies the family of algebraic equations

$$P_n(z, a) \equiv z^n + a_1 z^{n-1} + \dots + a_n = 0, \quad z \in K; \quad (a_1, \dots, a_n) \in D \quad (1)$$

for fixed n , where K is the complex plane and D is real Euclidean space. Many problems of stability and automatic regulation reduce to the study of properties of the roots of equation (1), depending on its coefficients as parameters. The author investigates a certain class Ω of such properties. He assumes that the conditions for preserving them can be expressed in terms of a condition of invariance of a finite number of differentiable relations between $x = \operatorname{Re} z$ and $y = \operatorname{Im} z$ with

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ACCESSION NR: AP4027582

respect to some Lie group G of transformations of the field K into itself. Thus, preservation of the Hurwitz conditions is guaranteed by the condition of invariance of the equation $x = 0$ for all transformations of some group G'_1 (transformations of G'_1 leave the imaginary axis of the z plane unmoved). Preservation of the conditions of reality of the roots is guaranteed by the condition of invariance of the equation $y = 0$ for all transformations of a certain (other) group G'_2 . The condition of preservation of a (finite) number of roots of any equation will be satisfied if the z plane undergoes transformations of any continuous (locally) group of transformations, etc. An example of properties not belonging to the class $\mathcal{A}$ is the property of the roots of the equation being expressed rationally or in radicals in terms of the coefficient a . Points of the space D for which a given property $\omega \in \mathcal{A}$ is satisfied will be called equivalent in ω , and the entire set of such points is the region of equivalence in ω . The author's aim is to find the boundaries of the regions of equivalence. He also discusses certain related problems. The idea of the work is the following. Suppose that together with some group G of transformations of the field K into itself there exists a group G_a of transformations of the space D into itself which is isomorphic to it (so that transformations of G do not

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depend on a , and transformations of G_a do not depend on z), and G and G_a are such that transformations of the extended group $G + G_a$ preserve equation (1). Then to each relation in K which is invariant with respect to G there corresponds a certain relation (one or several) in D which is invariant with respect to G_a , and between the corresponding intransitive systems in K and D a one to one relation is established. This fact also holds for any pair of isomorphic sub groups $G' \langle \longleftrightarrow \rangle G'_a$, $G' \subset G$, $G'_a \subset G_a$. If the group G is infinite and $\omega \in \Omega$, then there is a subgroup $G' \subset G$ preserving this property and isomorphic to its subgroup $G'_a \subset G_a$. The group G is called basic. Thus ω is realized if (and only if) the region of equivalence in ω coincides with strictly defined systems of intransitivity of the group G' . If the group G'_a is transitive, then the determination of the desired boundaries reduces to the finding of special invariant manifolds of G'_a . The latter may be accomplished by standard algebraic means. The author's aim is to show a basis for a Lie algebra which makes it possible to solve in closed form certain problems of finding invariant manifolds of G'_a . By transitivity if meant local transitivity at common points. The study is made in the framework of Lie algebras of

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ACCESSION NR: APL027582

infinitesimal operators. The author assumes the possibility of extending certain facts from the theory of finite Lie groups to infinite groups. In particular this involves the fact of existence of a group corresponding to an infinite algebra. For the sake of simplicity, all functions are assumed to be analytic (it is sufficient to consider them thrice differentiable). Orig. art. has: 20 formulas.

ASSOCIATION: none

SUBMITTED: 21Dec63

DATE ACQ: 28Apr64

ENCL: 00

SUB CODE: MA

NO REF SOV: 002

OTHER: 000

Cord 4/4

L 23445-66 EWT(1) IJP(c)

ACC NR: AP6007574

SOURCE CODE: UR/0040/66/030/001/0004/0013

AUTHOR: Markhashov, L. M. (Moscow)

ORG: none

TITLE: On conformally invariant movements of a material point

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 1, 1966, 4-13

TOPIC TAGS: relativity, relativity theory, conformal transformation, space mechanics, Lorentz force measurement, transformation

ABSTRACT: One of the principles of invariance is applied to movements of a material point in which movement is independent of the point mass. A law of motion of the point is so structured that it uses a broad group of space-time transformations in place of a maximal group. The kinematics of conformally invariant movements of the point are described, and one possible treatment of such movement is compared with Galileo's law of inertia. Maxwell's law for space free of matter is given as

$$\text{rot } H = \frac{1}{c} \frac{\partial E}{\partial t}, \quad \text{div } E = 0, \quad \text{rot } E = -\frac{1}{c} \frac{\partial H}{\partial t}, \quad \text{div } H = 0,$$

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ACC NR: AP6007574

where c is the speed of light. These equations are invariant with respect to the conformal fifteen-parameter group of space-time transforms. A condensed statement of the principles of invariance and their relationship with Maxwell's laws and the law of inertia is given along with the history of development of conformal groups. A system of fifteen infinitesimal operators corresponding to the conformal fifteen-parameter group is found. Of these, seven correspond to the ordinary group of movements, three are related to Lorentz transforms, one is a similitude operator, and four nonlinear operators correspond to Mobius transforms. A set of conformally invariant motions is found through the use of finite group equations developed by V. A. Pok (Teoriya prostranstva, vremeni i tyagoteniya. M. Gostekhizdat, 1955). Orig. art. has: 15 equations.

SUB CODE: 20/ SUBM DATE: 10Jul65/ ORIG REF: 004/ OTH REF: 011

Case 2/2 IV

L 05219-67 EWT(d)/EWP(1) TJP(c)
ACC NR: AP6028318

SOURCE CODE: UR/0040/66/030/004/0636/0649

AUTHOR: Markhashov, L. M. (Moscow); Plotnikova, G. V. (Moscow); Pozharitskiy, G. K. (Moscow)

ORG: none

TITLE: High speed pulse in second order linear systems

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 4, 1966, 636-649

TOPIC TAGS: optimal control ~~theory~~, ordinary differential equation, *CONTROL THEORY*

ABSTRACT: Optimal high speed controls in linear systems with constant coefficients are studied. The control vector is assumed to be one-dimensional and limited by the pulse, i. e., the integral of the control vector module in time does not exceed a certain positive constant M . The conditions for the existence of high speed controls between the points (x_{10}, x_{20}) and (x_1, x_2) of phase space are explained. It is shown that if these conditions are fulfilled, high speed control with time T between these points is realized with the help of pulses

$$u_1(x_{10}, x_{20}, x_1, x_2) \text{ and } u_2(x_{10}, x_{20}, x_1, x_2),$$

the number of which is not greater than two. The continuous and differentiable conditions for the functions T , u_1 , and u_2 are adduced, along with those for the functions

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L 05219-87

ACC NR: AP6028318

t^1 and t^2 , which express the relation of the moment of the pulses on the coordinates of the initial and final points. Orig. art. has: 85 formulas, 8 figures.

SUB CODE: 2012/

SUBM DATE: 27Dec65/

ORIG REF: 007/

OTH REF: 001

Card 2/2 *gd*

MARKHASIN, A.B., inzh.

Information transmission in an operative control system of technological processes in a strip mine. Izv. vys. ucheb. zav. gor. zhur. 8 no.2:15-19 '65. (MIRA 18:5)

1. Leningradskiy ordena Lenina i ordena Trudovogo Krasnogo Znameni gornyy institut imeni S. V. Plekhanova.

MARKHASIN, G. V.

Structures of the nitrates of rare-earth elements. V. I.
 Iveronova, Y. P. Tarasova, ~~Z. B. Zolotareva~~, G. V. Mark-
 hasin, and I. M. Sukhodreva (M. V. Lomonosov State
 Univ., Moscow). *Zhur. fiz. Khim.* 29, 314-16 (1953); cf.
 C.A. 46, 4313c. — The lattice parameters for $\text{La}(\text{NO}_3)_3 \cdot$
 $6\text{H}_2\text{O}$, $\text{Ce}(\text{NO}_3)_3 \cdot 5\text{H}_2\text{O}$, and $\text{Sm}(\text{NO}_3)_3 \cdot 5\text{H}_2\text{O}$ (where n is
 probably 6), resp., (a , b , and c in kX units and α , β , and γ
 in degrees) are: 8.896, 10.677, 6.633, 78.9, 102.1, 92.5;
 8.80, 10.83, 6.60, 78.8, 102.0, 91.8; 6.78, 5.20, 11.7, 109,
 91, 119. J. W. Loweberg, Jr.

MARKHASIN, I. L.

AID P - 282

Subject : USSR/Engineering

Card : 1/1

Authors : Babalyan, G. A., Movsesyan, S. G. and Markhasin, I. L.

Title : Driving of oil out of two layers of soil

Periodical : Neft. Khoz., v. 32, #4, 36-41, Ap 1954

Abstract : The article concerns experiments on forced filtration of oil from two layers of different penetrability placed in a cylindrical vessel. Two sands of different penetrabilities were saturated with kerosene, and pure and alkaline waters were selected as the medium for driving kerosene from the sands. The experiments indicate that the intensity of the filtration of kerosene varried with relative location of the materials of higher penetrability. Alkaline water worked out about 8 to 10% more kerosene than pure water. 3 tables, 5 charts and 1 Russian reference (1951)

Institution : None

Submitted : No date

MARKHASIN, I. L.

AID P - 496

Subject : USSR/Mining

Card 1/1 Pub. 78 - 10/27

Authors : Torikov, D. M. and Markhasin, I. L.

Title : Determination of residual water-and-oil-saturation in oil-containing sands under stratum conditions.

Periodical : Neft. Khoz., v. 32, #6, 37-42, Ju 1954

Abstract : Knowledge of the amount of residual water in the oil collector has an important significance for their rational exploitation. The author discusses conventional experimental determination of the residual water by the method of capillary substitution under atmospheric conditions and proposes the experimental testing of this method under high pressure. 2 drawings, four tables and two charts.

Institution : Ufa Petroleum Scientific Research Institute (UFNII)

Submitted : No date

MARKHASIN, I.L

MARKHASIN, I.: "A shift in the boundary between two immiscible liquids in a porous medium". Ufa, 1955. Moscow Petroleum Inst imeni Academician Gubkin. Ufa Petroleum Sci Res Inst, Laboratory of Underground Hydraulics and the Physics of Strata. (Dissertation of the Degree of Candidate of Science of Technical Sciences)

SO: Knizhnaya Letopis', No. 41, 8 Oct 55

SOV/124-57-5-5833

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 5, p 115 (USSR)

AUTHORS: Markhasin, I. L., Fakhreyev, I. A.

TITLE: A Flow-rate Transducer Permitting Control of Volumetric Liquid-flow Rates (Datchik postoyannoy ob'yemnoy skorosti dvizheniya zhidkosti)

PERIODICAL: Novosti neft. tekhn. Neftepromysl. delo, 1956, Nr 5, pp 25-26

ABSTRACT: Described briefly is a transducer device permitting control of volumetric liquid-flow rates such that, under normal atmospheric pressure conditions, any desired volumetric rate of flow within the 0.01 - 20cm³/hr range can be achieved and maintained. The device is designed to assure a constant rate of flow during investigations of the filtration or seepage of liquids through porous media; it will function in hydraulic systems having total pressures of up to 200 kg/cm². The liquid is kept flowing by the action of a weight, and its flow is controlled by a timer. A stationary plunger forces the liquid from a sliding cylindrical tank. This sliding tank is actuated by a moving weight which is suspended from it. A small cable links the tank to the reducing gear of the timer. Included is a schematic diagram showing

Card 1/2

SOV/124-57-5-5833

A Flow-rate Transducer Permitting Control of Volumetric Liquid-flow Rates

the principle of the device.

T. B. Kurova

Card 2/2

BABALYAN, G.A.; RUDAKOV, G.V.; KRAVCHENKO, I.I.; MARKHASIN, I.L.

Using surfactants for increasing oil recovery. Izv. vys.
ucheb. zav.; neft' i gaz 4 no.1:43-48 '61. (MIRA 15:5)

1. Bashkirskiy gosudarstvennyy universitet i Ufimskiy nauchno-
issledovatel'skiy institut.
(Oil field flooding)
(Surface-active agents)

BABALYAN, Grigoriy Avetisovich; KRAVCHENKO, Ivan Ivanovich; ~~MARKHASTIN,~~
Il'ya L'vovich; RUDAKOV, Georgiy Vasil'yevich; REBINDER, P.A.,
~~SPADENIK, red.~~; KAYESHKOVA, S.M., ved. red.; FEDOTOVA, I.G.,
tekhn. red.

[Physicochemical bases for using surfactants in developing oil
formations] Fiziko-khimicheskie osnovy primeneniia poverkhnostno-
aktivnykh veshchestv pri razrabotke neftiannykh plastov. [By]
G.A. Babalian i dr. Moskva, Gostoptekhzdat, 1962. 282 p.
(MIRA 15:9)

(Surface-active agents)
(Oil reservoir engineering--Equipment and supplies)

KOVALENKO, K.I. MARKHASIN, I.L.; BEREZIN, V.M.; PANTELEYEV, V.G.

Increasing the oil yield of beds by injecting carbonated water.
Neft. khoz. 42 no.11:6-9 N '64 (MIRA 18:7)

TUMASYAN, A.B.; BABALYAN, G.A.; MARKHASIN, I.L.

Adsorption of oil asphaltenes in the Kyurovdag field of Azerbaijan.
Izv. AN Azerb. SSR. Ser. geol-geog. nauk no.4:91-94 '64.

(MIRA 17:12)

MARKHASIN, Yu. A., inzhener.; PETROV, I.V., inzhener.

Conditions for an effective dry separation of poor magnetite
ores of Gornaya Shoriya. Gor. zhur. no.3:67-69 Mr '57. (MLRA 10:4)

1. Kuznetskiy metallurgicheskiy kombinat.
(Kemerovo Province--Magnetite) (Magnetic separation of ores)

ZHEREBIN, Boris Nikolayevich; MINKIN, Valentin Mikhaylovich; MATUSEVICH, Leonid Yakovlevich; GUR'YANOV, Vasilii Grigor'yevich; MARKHASIN, Yuriy Abramovich; SHITREV, Dmitriy Alekseyevich; BALLA, G.F., red.; SOKOLOVSKIY, V.A., red.; DOKUKINA, Ye.V., red. izd-va; DOBUZHIN-SKAYA, L.V., tekhn. red.

[Expansion of blast furnace production at the Kuznets Metallurgical Combine] Razvitie domennogo proizvodstva na Kuznetskom metallurgicheskom kombinat. Pod obshchei red. B.N.Zherebina. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 361 p. (MIRA 14:6)
(Stalinsk—Blast furnaces)

MARKHAS'YEVA, V.A.; SIDORENKO, V.O.

Effect of some environmental factors on the development of
yellow rust in wheat. Mikrobiol. zhur. 15 no.3:61-67 '53.
(WHEAT--DISEASES AND PESTS) (MLRA 8:1)
(DUCCINIA GLUMARUM)

IVANOVA, O.N.; MARKHAY, Ye.B., red.

[Use of electronic commutation in automatic telephony]
Primenenie elektronnoi kommutatsii v avtomaticheskoi telefonii; uchebnoe posobie. Moskva, Mosk. elektrotekhn. in-t sviazi, 1962. 166 p. (MIRA 17:6)

MARKHAY, Ye. V. [author]

"Principles of the Engineering Economics of Laying Out City Telephone Networks."

1953, Moscow, Svyazizdat, 424 Pages, 10 rubles

KOVALENKOV, V.I., laureat Stalinskoy premii; MARKHAY, Ye.V., kandidat
tekhnicheskikh nauk.

Design of a telephone relay substation. Vest.svyazi 14 no.2:32
F '54. (MLRA 7:5)

1. Chlen-korrespondent Akademii nauk SSSR (for Kovalenkov).
2. Direktor laboratorii po razrabotke nauchnykh problem provodnoy
svyazi Akademii nauk SSSR (for Kovalenkov). 3. Zamestitel' nachal'-
nika MRIS (for Markhay). (Telephone stations)

MARKHAY, Ye.V.; ROGINSKIY, V.N.; KHARKEVICH, A.D.. Primal uchastiye
ZHAR, N.R., inch.. METEL'SKIY, G.B., otv.red.; RYAZANTSEVA,
M.M., red.; SHEFER, G.I., tekhn.red.

[Automatic telephony] Avtomaticheskaya telefoniya. Moskva.
Gos.izd-vo lit-ry po voprosam svyazi i radio, 1960. 535 p.
(MIRA 13:7)

(Telephone, Automatic)

MARKHAY, Ye.V.

Letter to the editor. Izv. vys. ucheb. zav.; radiotekh. 4 no.4:
504-505 J1-Ag '61. (MIRA 14:11)

1. Ispolnyayushchiy obyazannosti nachal'nika Moskovskogo elektro-
tekhnicheskogo instituta svyazi.

(Radio)

IVANOVA, Ol'ga Nikolayevna; LAZAREV, Vladimir Georgiyevich;
PIYL', Yelena Ivanovna; MARKHAY, Ye.V., prof., otv. red.;
VOLKOVA, E.M., red.

[Synthesis of electronic circuits with discrete action]
Sintez elektronnykh skhem diskretnogo deistviia. Moskva,
Izd-vo "Sviaz'," 1964. 175 p. (MIRA 17:5)

MARKHEL', I.

Using grabs in transshipping lumber at the Omsk docks. Rech. transp. 19
no. 8:39-40 Ag '60. (MIRA 14:3)

1. Nachal'nik tekhnicheskogo otdela Omskogo rechnogo porta.
(Omsk—Lumber—Transportation)
(loading and unloading)

SITCHIKHIN, V.; OSIS, Z.; MARKHEL, I., red.; GRANT, V. [Grants, V.],
tekhn. red.

[The seven-year plan of Latvia in operation] Semiletka Lat-
vii v deistvii. Riga, Latviiskoe gos. izd-vo, 1963. 73 p.
(MIRA 16:8)

(Latvia--Economic policy)

BOBROV, V.; MARKHEL', I., red.; FREYMANIS, V., tekhn. red.

[Ocean industry] Industrija v okeane. Riga, Latvieskoe
gos. izd-vo, 1963. 66 p. (MIRA 17:2)

MARKHEL', L.S.

Some results of the analysis of pollen of *Artemisia lercheana*
Web. and *Plantago salsa* Pall. Sbor.nauch.rab.asp. VGU
no.2:89-91 '62. (MIRA 18:11)

MARKHEL', P. S.

7697. MARKHEL', P. S. -Tekhnicheskiye usloviya enstvovaniya leningradskikh
khlebozavodakh. sbornik po obmenu peredovym opytom. pod red. A. S.
Yabol'skoro. L., Lenizdat, 1954. 36s. s ill. 21 sm. (Len. ingr. otd-
niyevsesoyuz, Nauch, i inzh. tekhn. O-VA pishchevoy prom-sti Len. ingr.
Trest Glavkhleb) 1.000 ekz. Bespl.-(55-4138)p 664.65st

SO: Knizhnaya Letopis', Vol. 7, 1955

MARKHEL', Pavel Sil'vestrovich, kand. tekhn. nauk; SMELOV, Sergey Vasil'yevich, master-konditer; MASLOV, Ivan Nikolayevich, kand. tekhn. nauk; DANILEVSKAYA, Valentina Vladimirovna, kand. tekhn. nauk; GOPENSHTEYN, Yuriy Lazarevich, inzh.; VIDANOV, Konstantin Iharitonovich, inzh.; ZAPENINA, Nina Vasil'yevna, kand. tekhn. nauk; SOKOLOVA, Nina Ivanovna, tekhnolog; PRITYKINA, L.A., red.; KISINA, Ye.I., tekhn. red.

[Confectionery products made with flour] MACHNye konditer-skie izdeliia. [By] P.S. Markhel i dr. Moskva, Pishche-promisdat. Pt. 1. [Making of pastries, torten, cakes, oriental and dietetic products] Proisvodstvo piroshnykh, tortov, keksov, vostochnykh i dieticheskikh izdelii. 1962. 679 p.

(MIRA 16:7)

(Baked products)

MARKHEL', Pavel Sil'vestrovich, kand. tekhn. nauk; PETROVA, Nina Nikolayevna, nauchnyy sotr.; RUSANOVA, Aleksandra Viktorovna, nauchn. sotr.; IZMAIL, Lyudmila Nikiforovna, nauchn. sotr.; BABUSHKIN, Aleksey Il'ich, master po remontu; IVANOV, Viktor Tikhonovich, pechnik; ALEKSANDROV, Vladimir Mefod'yevich, inzh.; KONOVTSSEV, Svyatoslav Vsevolodovich, inzh.-mekhanik; PRITYKINA, L.A., red.; KISINA, Ye.I., tekhn. red.

[Handbook on the overhauling of bakery equipment] Spravochnik po kapital'nomu remontu khlebopekarnogo oboorudovaniya. Moskva, Pishchepromizdat, 1963. 307 p. (MIRA 16:7)

1. Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut khlebopekarnoy promyshlennosti. Leningradskiye otdeleniya.
2. ~~Nauchno-issledovatel'skiy institut ekonomiki~~, organizatsii proizvodstva i truda Leningradskego otdeleniya Tsentral'nogo nauchno-issledovatel'skego instituta khlebopekarnoy promyshlennosti (for Markhel').

(Bakeries--Equipment and supplies)
(Food machinery--Maintenance and repair)

MESHKOV, Yuriy Konstantinovich; MARKHEL', P.S., kand. tekhn. nauk, retsenzent; KALITA, N.Ya., kand. ekon. nauk, retsenzent; FUKS, V.K., red.

[Establishment of technical work norms in enterprises of the food industry] Tekhnicheskoe normirovanie truda na predpriatiakh pishchevoi promyshlennosti. Moskva, Pishchevaia promyshlennost', 1964. 235 p. (MIRA 18:3)

MARKHEL: P.P.

3.

Chem

2518. New colour reaction for the calcium ion.
 E. P. Markhel, Sb. Rabot. Med. 1956, 11, 79-83; Ref. Zhur., Khim., 1956 Abstr. No. 71,056
 —To detect Ca^{2+} , moisten a strip of filter paper with
 0.1 N Fe^{3+} soln, dry it, dip it in 0.1 N Na_2S
 soln, dry it, dip it in 0.1 N Na_2S
 drop of the test soln. The colorless
 spot is formed. The sensitivity is
 0.04 μg , the limiting dilution is 1:1000.
 Interference is caused by Mg^{2+} , Ba^{2+} , Sr^{2+} ,
 NO_3^- and SO_4^{2-} .

4275

PM 1-1-58

MARKHEL', Ye. P.; NOVOTEL'NOV, N.V.

Effect of the antibiotic gordessin on the process of ascorbic acid oxidation. Izv. vys. ucheb. zav.; pishch. tekhn. no.5:31-34 '61. (MIRA 15:1)

1. Leningradskiy tekhnologicheskii institut kholodil'noy promyshlennosti. Kafedra biokhimii i mikrobiologii.
(Antibiotics) (Ascorbic acid)

APOSTOL, George; YEMTSOVA, R.[translator]; MARKHEVA, V., red.; ZHRELEZNOVA,
L.M., red.; RAKOV, S.I., tekhn.red.

[Trade unions of the Rumanian People's Republic in the establishment
of socialism] Profzoiuzy Rumynskoi Narodnoi Respubliki v bor'be za
postroenie sotsializma. [Moskva] Izd-vo VTsSPS Profizdat, 1957.
70 p. (MIRA 11:5)

(Rumania--Trade unions)

SOV/115-59-7-10/33

25(1), 28(2)

AUTHOR: Markhevka, F.A.

TITLE: The Static Calibration of Accelerometers and Accelerographs by Means of a Centrifugal Device

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 7, pp 18-20 (USSR)

ABSTRACT: The author recommends the application of a centrifugal device designed by P.N. Agaletskiy, Authors Certificate Nr 72949, dated December 6, 1948. This device was developed for producing accelerations up to 15 g. According to the authors experiments, the error of determining the actual acceleration magnitude when checking accelerometers on the centrifugal device, did not exceed $\pm(1-3\%)$. The time T is measured with a printing chronograph 21P with an absolute error of ± 0.002 seconds. This device was used for testing and calculating contact-type, maximum accelerometers, designed for measuring maximum acceleration at transport vibration tests. The author mentioned briefly the experience made with the accelerometer GBM-200. There is 1 diagram and 1 Soviet reference.

Card 1/1

MARKHEVKA, I.

Peer planning in budgeting basic repair work for plants of the
Main Administration of the Flour and Feed Industry. Muk.-elev.
prem. 21 no.12:17-18 D '55. (MIRA 9:4)

1.Glavnoye upravleniye mukomel'noy, krupyaney i kombikormovoy
promyshlennosti.
(Grain-milling machinery--Repairing)

MARKHEVKA, I., starshiy ekonomist.

New wholesale prices for flour, groats and mixed feed. Muk.-elev.
prom. 22 no.3:5-6 Mr '56. (MIRA 9:7)

1. Planovo-finansovyy otdel Glavmuki.
(Flour and feed trade)

MARKHEVKA I

Daily efforts for lower production costs in flour, groats and
feed milling. Muk-elev.prom. 22 no.7:16-17 J1 '56.(MIRA 9:9)
(Grain milling)

MARKHEVKA, I.

Recent developments in the planning and estimating of the production cost at the enterprises of the flour milling, groats, mixed feed, and corn processing industry. Muk.-elev. zhurn. 29 no.11:10-12 N '63.

(MIRA 17:2)

1. Zamestitel' nachal'nika otdela planirovaniya promyshlennosti Vse-rossiyskogo ob'yedineniya khleboproduktov.

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29439
S/081/61/000/017/129/166
B117/B102

AUTHORS: Mamedaliyev, Yu. G., Mamedaliyev, G. M., Aliyev, S. M.,
Suleymanov, G. N., Markhevka, V. M.

TITLE: Catalytic reforming of light oil obtained by pyrolysis of
hydrocarbon gases

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1961, 465, abstract
17M152 (Azerb. khim. zh., no. 6, 1960, 3 - 13)

TEXT: A study of reforming in the pseudoliquid layer of an aluminosilicate catalyst has shown that complete chemical stabilization of the crude can be achieved under the following conditions: atmospheric pressure, temperature of 320 - 380°C, and a feed rate of the crude of 0.5 - 0.75 hr⁻¹. The total yield in benzene, toluene, and xylenes is increased by 1.4 times, as compared with the method of sulfuric-acid purification. The results of laboratory tests were checked on an enlarged testing plant, and were found to be correct. The yield in aromatics amounted to 94 % by weight of the crude, including 60 % by weight of benzene, 22 % by weight of toluene, and

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Catalytic reforming of light oil...

29439

S/081/61/000/017/129/166
B117/B102

3 % by weight of xylenes and ethyl benzene. Paraffin, naphthene, and unsaturated hydrocarbons are absent in the catalyzate. This allows aromatic substances to be separated by precise rectification. A small coke deposit is found on the catalyst, which can be easily burned out in the regenerator. The activity of the catalyst is thus virtually restored. The process developed here is more advantageous than the method of purifying liquid pyrolysis products with the aid of reagents. The introduction of this process into industry will make it possible to increase the production of low-molecular aromatics. [Abstracter's note: Complete translation.]

Card 2/2

L 12307-63

EWP(j)/EPF(c)/EWT(m)/BDS ASD Pr-4/Pc-4 RM/WW
S/081/63/000/005/064/075 66

AUTHOR: Mamedaliyev, Yu. G., Mamedaliyev, G. M., Aliyev, S. M., Rzayeva, F. D. and Markhevka, V. M.,

TITLE: Production of syntnetic tars and aromatic hydrocarbons by complex treatment of liquid pyrolysis products

PERIODICAL: Azerativnyy zhurnal, Khimiya, no. 5, 1963, 587, abstract 5T24, (Azerb. kimja zh. Azerb, khima,zh. 1962, no. 1, 3 - 15)

TEXT: The polymerization of unsaturated compounds of the 110 - 190° C fraction of pyrolysis tar of gases in the presence of various initiators, (IN) (hydroperoxide of di-isopropylbenzenes and others) was investigated. The influence of various factors (temp., concentration of IN and duration of experiment) on the polymerization process was studied. It was shown that at 80° C concentration of IN 1.5 - 4 % and duration of 25 - 70 hours the yield of white powder-like polymer was 25 - 35 % of the weight of the starting materials. Its intrinsic viscosity in benzene is 0.1 - 0.15; mol. weight 10000 - 20000, softening temp. (by the ring and ball method) is 145 - 150° C, spec. gr. 1.05 - 1.1. A test on synthesized tars was conducted and it was

Card 1/2

L 12307-63

Production of synthetic tars and

S/081/63/000/005/064/075

established that compositions made with them possess a variety of valuable physical and mechanical properties. Catalytic reforming of the non-polymerizing part of a polymerizing mixture with benzentoluene fractions of tar of pyrolysis of gases was studied and it was shown that the preliminary obtaining of synthetic resins does not exert a negative influence on the output of the lower molecular weight aromatic hydrocarbons. The characteristics of the starting materials and the obtained products are given. A complex scheme is proposed for treatment of light oil from pyrolysis of hydrocarbon gases, which enables production of synthetic tars, benzene, toluene, xylene and others. T. Danilova).

[Abstractor's note: Complete translation]

Card 2/2

See

PROCESSING AND PROPERTIES INDEX

~~The present position of fine-grain development K.~~
~~Martikoukhin, Sovet Kino-Photo Ind. No. 3, 20-31~~
(1935). - A review. C. E. K. Mees

5

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSING AND PROPERTIES INDEX

5

Duplicating of negatives. K. Markhlyakich, S. A. Bachurina, I. Verbitskaya and Yu. Chibor. *Soviet Kino Photo Ind.* No. 3, 48-52 (1936).—As a result of an analysis of com. duplicating films (Kodak, Agfa, Gevaert, Ferrania), the following specifications were drawn for neg. duplicating film (with yellow dye) and for pos. duplicating film (with lavender base), resp.: sensitivity (10/i) 15-20, 5-7; latitude 1.8-2.0, 1.2; γ_{max} 0.0, 2.4-2.4; D for $\gamma = 0.0$ 8-12 min., 2-3 min.; log for γ_{max} 0.10-0.12, 0.05-0.06; shape of curve for both films, definite straight-line portion; d at beginning of straight line 0.3, 0.4; resolving power (max.) 70-77, 70-77; and graininess (in both cases), as average pos. film.

C. E. K. Mee

ASD-314 METALLURGICAL LITERATURE CLASSIFICATION

18000 SYMBOLS

MARKHILFVICH, K. I. Cand. Tech. Sci.

Dissertation: "Countertyping of Motion Picture Negatives." Moscow Polygraphical Inst,
19 May 47.

SC: Vechernyaya Moskva, May, 1947 (Project #17236)

MARKHILEVICH K.I.
ANTONOV, S.M.; MARKHILEVICH, K.I.

[How pictures appear on film] Kak poiaavliaetsia na plenke
izobrazhenie. Moskva, Goskinoizdat, 1950. 61 p. (MIRA 10:11)
(Cinematography)

MARKHILEVICH, K. I.

Technology

Additional treatment of photographic negatives, V. I. Mikulin. Pod obshch. red.
K. I. Markhilevicha. Moscow, Goskinoizdat, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1952. Uncl.

MIKHAYLOV, V.Ya.; MARKHILEVICH, K.I., red.; VOROB'YEVA, L.M., red.izd-va;
SHLEMSKIY, I.A., tekhn.red.

[Manual of photographic laboratory procedures] Rukovodstvo oo
fotolaboratornym rabotam. Moskva, Izd-vo geodes. lit-ry, 1954.
222 p. (MIRA 11:5)

(Photography--Handbooks, manuals, etc.)

JAMES, T.; MARKHILEVICH, K.I.[translator]; KHEYNMAN, A.S.[translator];
CHIBISOV, K.V., redaktor.

[Fundamentals of photographic theory] Osnovy teorii fotograficheskogo protsesssa. Perevod s angliiskogo K.I.Markhilevicha i A.S.Kheynmana. Pod red. K.V.Chibisova. Moskva, Izd-vo inostrannoi lit-ry, 1954. 280 p. (MLRA 7:8)
(Photography)

MARKHILEVICH, K.I.; YASHTOLD-GOVOROKO, V.A.; IOFIS, Ye.A., kandidat tekhnicheskikh nauk, redaktor; TELESHEV, A.N., redaktor; MATISSEN, Z.M., tekhnicheskiiy redaktor

[Photographic chemistry] Fotograficheskaya khimiya. Pod red. E.A. Iofisa. Moskva, Gos. izd-vo "Iskusstvo, 1956. 174 p. (Biblioteka fotoliubitelia, no.10)
(Photographic chemistry) (MLBA 10:2)

MARKHILEVICH, K.I.

General principles of the rapid processing of photographic materials.
Zhur.nauch.i prikl.fot.i kin. 1 no.1:60-62 Ja-V '56. (MIRA 9'10)
(Photography--Developing and developers)

MARKHILEVICH, K.I.

Principles of prescribing for the rapid processing of
photographic materials. K. I. Markhilevich. Zhur.
Nauk. i Priklad. Fot. i Kinetografi. 1, 63 (1950).
Davies and Soper (C.A. 44, 10558J) - Review
I. W. Lowebach, Jr.

GN
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1

MARKHILEVICH, K.I.

History of the method of obtaining an image by means of diffusion
transfer. Zhur.nauch. i prikl.fot. i kin. 1 no.2:139-141 Mr-Ap '56.
(MIRA 9:10)

(Photography)

MARKHILEVICH, K. I.

USSR/Chemical Technology - Chemical Products and Their Application. Photographic Materials, I-19

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63026

Author: Markhilevich, K. I.

Institution: None

Title: Rapid Processing Procedures in Conventional Photographic Work

Original

Periodical: Zh. nauch. i prikl. fotografii i kinematogr., 1956, 1, No 2, 141-143

Abstract: Described are 2 procedures of rapid processing of high-sensitive negative materials: (1) Using of D-10 hardening developer having the composition: solution A, pyrocatechol 100 g, anhydrous Na_2SO_3 100 g, water to one liter; solution B, NaOH 60 g, KBr 100 g, water to one liter; the solution used consists of one part solution A and one part solution B; to one l solution are added 50 ml formalin; temperature of processing solutions 24° ; (2) SH-5 solution for preliminary hardening having the following composition: formalin 5 ml, 6-nitrobenzimidazole nitrate (5% solution) 40 ml, anhydrous Na_2SO_4 50 g,

Card 1/2

USSR/Chemical Technology - Chemical Products and Their Application. Photographic Materials, I-19

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63026

Abstract: anhydrous Na_2CO_3 10 g, with water to one liter, and D-82 developer, with double amount of NaOH, having the following composition: metol 14 g, hydroquinone 14 g, anhydrous Na_2SO_3 52 g, NaOH 17.6 g, KBr 8.8 g, water to one liter; temperature of processing solutions 27°.

Card 2/2

MARKHILEVICH, K.I.

Simultaneous development and fixing. Zhur. nauch. i prikl.
fot. i kin. 1 no.4:299-301 J1-Ag '56. (MLRA 9:10)

(Photography--Developing and developers)

MARKHILEVICH, K. I.

MARKHILEVICH, K.I.

Shortening the processing time and using less water by stabilizing
the developed image. Zhur.nauch.i. prikl.fot.i kin. 2 no.2:148-150
Mr-Ap '57. (MLRA 10:5)

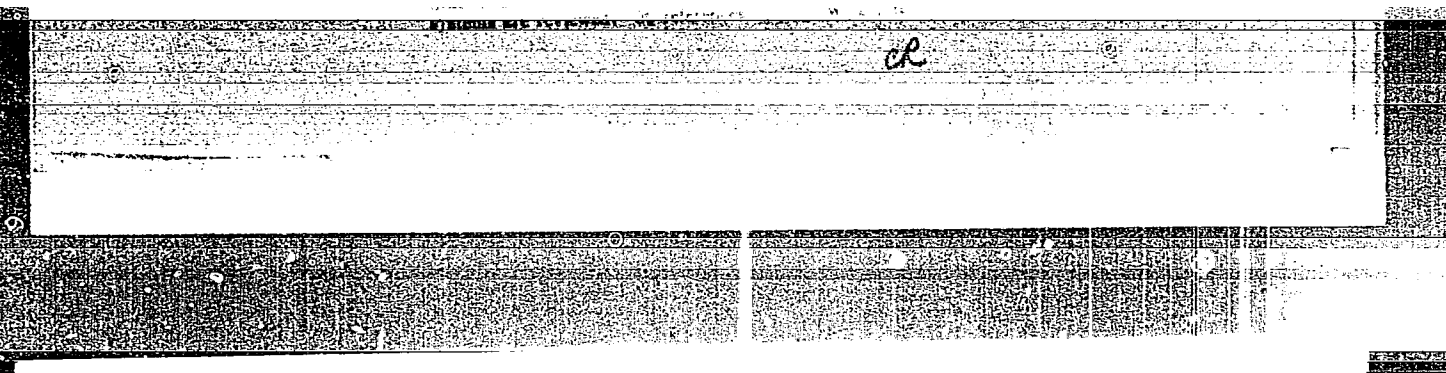
(Photography--Developing and developers)

MARKHILEVICH, K.I.; SHEBERSTOV, V.I.

IU.I. Bukin; obituary. Zhur.nauch.i prikl.fot.i kin. 2 no.4:315
Jl-Ag '57. (MIRA 10:7)
(Bukin, IUrii Ivanovich, 1901-1957)

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LEKONT, Sh. [Lecomte, Jean]; KHEYMAN, A.S. [translator]; MARKHILEVICH,
K.I. [translator]; YKLINER, A.S. [translator]; TUMERMAN, L.A.,
red.perevoda; GESSEN, L.V., red.; GAVRILOV, S.S., tekhn.red.

[Infrared radiation] Infraqrasnoe izluchenie. Pod red. L.A.
Tumermana. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1958. 584 p.
[Translated from the French] (MIRA 12:4)
(Infrared rays)

AUTHORS: Markhilevich, K.I.; Sheberstov, V.I. SOV 77-3-4-16/23

TITLE: The Choice of the Best Criterion of Photosensitivity (K voprosu o vybore optimal'nogo kriteriya svetochuvstvitel'nosti) A Reply to S.S. Gilev's Comments (Otvét na zamechaniya S.S. Gileva)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii. 1958, Vol 3, Nr 4, pp 290-293 (USSR)

ABSTRACT: The authors attack S.S. Gilev's comments on their previously published article on the best criterion of photosensitivity. They point out that the system of taking $0.2 + D_0$ as the criterion is not universal for all types of photography as Gilev infers. They indicate and discuss some logical holes and omissions in Gilev's argument and some wrong inferences he has drawn from Mikhaylov and Istomin. The best criterion would be one by which values for photosensitivity could be worked out independent of the practical use to which the film is to be put. The authors therefore repeat their proposal for the use of two criteria of photosensitivity for each film: the point of inertia and a certain minimum "near threshold" optical density (e.g. $0.1 + D_0$). They also recommend the "Système officiel Français". Some of the errors present in the system of working out the photosensitivity of films in the

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SOV 77-3-4-16/23

The Choice of the Best Criterion of Photosensitivity. A Reply to S.S. Gilev's
Comments

factories by use of GOST 2817-50 are discussed. There are
15 references, 14 of which are Soviet and 1 French.

1. Photographic emulsions--Photosensitivity 2. Photographic emulsions
--Theory 3. Photographic emulsions--Standards

Card 2/2

GRIGOROVICH, V.; MARKHILEVICH, K.

Contrast and soft developers, and the color of the developed
image: difficulty with the formula. Sov.foto. 18 no.11:50-53
N '58. (MIRA 11:12)

(Photography--Developing and developers)

ABRITALIN, B.; MARKHILEVICH, K.; PYATKIN, I.

The antifoggant effect of benzotriazole. Sov.foto 18 no.12:48
D '58. (MIRA 11:12)
(Benzotriazole) (Photographic emulsions)

MARKHILEVICH, K.I.; SHKBERSTOV, V.I.; KIRILLOV, N.I., prof., doktor tekhn.nauk; MASLENKOVA, N.G.; KOLOSOV, K.A.; MIKHAYLOV, V.Ya.; MATIYASEVICH, L.M.; FRIDMAN, I.M.; SPASOKUKOTSKIY, N.S.; KHAZAN, S.M.; DEYCHMEYSTER, M.V.; BLYUMBERG, I.B., dotsent, retsenzent; LYALIKOV, K.S., prof., doktor khim.nauk, retsenzent; TELESHEV, A.N., red.; MALEK, Z.N., tekhn.red.

[Present-day developments in photographic processes; processing of light sensitive materials and new processes for obtaining the photographic image] Sovremennoe razvitie fotograficheskikh protsessov; obrabotka svetochuvstvitel'nykh materialov i novye protsessy polucheniya fotograficheskogo izobrazheniya. Pod red. N.I.Kirillova. Moskva, Gos.izd-vo "Iskusstvo," 1960. 341 p.
(MIRA 14:4)

1. Leningradskiy institut kinoinzhenerov (for Blyumberg).
(Photographic chemistry)

S/081/62/000/004/063/087
B150/138

AUTHORS: I - Markhilevich, K. I., Abritalin, V. L., Pyatkin, I. I.
II - Markhilevich, K. I., Abritalin, V. L.

TITLE: Investigation of the process for treating a high-density panchromatic aerial film. I - The operating conditions for treating aerial film in a manual developing apparatus. II - Increasing the photosensitivity and uniformity of development by cyclic development of aerial film. III - Sensitometric investigation of the method of "hungry" development of aerial films.

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 457, abstract 4L429 (Tr. Vses. n.-i. kinofotoin-ta, no. 35, 1960, 110-116; 117-119; 120-125)

TEXT: The literature on the development of aerial films is reviewed in connection with the requirements for aerial photograph interpretation and to establish the dependence of resolution on the range of contrast. The

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Investigation of the process...

S/081/62/000/004/063/087
B150/B138

appropriate length of aerial film and the developing time are established for a developing apparatus with manual rewinding. A method is suggested for cyclic development by continuous winding of the film from one spool to the other. It produces excellent results with regard to increasing the photosensitivity of the film and the uniformity of development. A sensito-metric investigation is made, of a method of development which increases light-sensitivity and includes repeated steeping of the film in the developer with subsequent holding between glasses. [Abstracter's note: Complete translation.]

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S/081/62/000/006/065/117
B149/B108

AUTHORS: Markhilevich, K. I., Arnol'd, Ts. S., Abritalin, V. L.
TITLE: Study of the treatment of highly sensitive panchromatic
aerial film. IV. The influence of hydrazine on the
developing process
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1962, 505, abstract
6L450 (Tr. Vses. n-i kino-fotoin-ta, no. 35, 1960, 126 - 136)

TEXT: The influence of various hydrazine derivatives added to metolo-
hydroquinone developer on the photographic properties of aerial film has
been investigated. Some of these derivatives increase the speed of
development and the photosensitivity of the layer with a simultaneous
increase in image granularity and fog density. It is possible to select
such concentrations of hydrazine derivatives that the increase in photo-
sensitivity is not followed by an increase in fog density or granularity.
Report III, see RZhKhim, 4L429. [Abstracter's note: Complete translation.]

Card 1/1

ABRITALIN, V.L.; MARSHLEVICH, K.I.

Testing certain developers recommended as intensifiers of emulsion
sensitivity. Zhurnal fot. i kin. 6 no.4:252-255
Jl-Ag '61. (14 14:11)

1. Voprosy avtomatizatsii i mekhanizatsii mikrofotoinstitut
(MFI).

(photographic emulsions)

(Photography--Developing and developers)

MARKHININ, Ye.K.

The state of Mendeleyev Volcano in the summer of 1954. Biul.
Vulk.sta. no.24:33-39 '56. (MLRA 9:10)

(Mendeleyev Volcano)

15-57-1-296

15-57-1-296

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1,
pp 41-42 (USSR)

AUTHOR: Markhinin, Ye. K.

TITLE: Association of the Hydrothermal Phenomena with the
Faults on Kunashir Island (O priurochennosti paro-
gidrotermal'nykh proyavleniy na ostrove Kunashir k
razryvnyam narusheniyam)

PERIODICAL: Buyl. Vulkanol. st. AN SSSR, 1956, Nr 24, pp 39-46

ABSTRACT: Two types of faults exist on the Kunashir Island: the
tectonic ones and the volcano-tectonic ones, both
representing faults of the second order. Hot springs
and fumaroles can be divided into two classes,
depending on whether they are associated with the
former or with the latter type of faults. These two
classes are: 1) the hydrothermal phenomena not directly
related to the formation of volcanoes; 2) hot springs
and fumaroles directly related to the formation of

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15-57-1-296

Association of the Hydrothermal Phenomena (Cont.)

volcanoes. The Goryachiy Plyazh group of springs, distributed at the foot of the Mendeleyev volcano and associated with faults of tectonic type, and also the Dobryy Klyuch spring lying on the fault-line which connects the volcano of Golovnina and Tyatya, are associated with phenomena of the first type. To the second type belong the springs distributed in the fumarole fields near the Mendeleyev and Golovnin volcanoes. The fumaroles at the northern shore of the Golovninskoye Lake probably owe their existence to the dislocation of collapsed formations. The temperature of the springs is about 100°, the water composition follows the general pattern by exhibiting high acidity and a content of chloridosulphates, sodium and a high percentage of Fe and Al. The origin of the springs at the Okhotsk shore district (the Neskuchenskiye, Stolbovskiye, Tret'yakovskiye and Alekhinskiye springs) calls for a special investigation.

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S. P. B.

MARKHININ, Ye.K.

Quartz-olivine dacite from Kunashir Island. Biol. Vulk. sta. no.26:
101-107 '57. (MIRA 11:5)

(Kunashir Island--Dacite)

MARKHININ, Ye.K.

Effect of buried relief on the formation of Haryn coal deposits.
Sov.geol. no.59:189-191 '57. (MIRA 11:4)
(Fergana Depression--Coal--Geology)

MARKHININ, Ye.X.

"Turtle" structure overlying modern laccolith in the Golovnin
caldera. Sov. geol. no.61:147-149 '57. (MIRA 11:4)

1. Laboratoriya vulkanologii AN SSSR.
(Kunashir Island--Geology, Structural)

MARKHININ, Ye. K.

20-5-30/48

AUTHOR: Markhinin, Ye. K.

TITLE: Energy of Formation of Juvenile Volcanic Ash (Ob energii obrazovaniya yuvenil'nogo vulkanicheskogo pepela)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 5, pp. 826 - 829 (USSR)

ABSTRACT: After a short reference review and the detection of the imperfect investigation of the question mentioned in the title the author states that the formation of the juvenile ash takes place in consequence of the disruption of still liquid lava by gases. This can take place only if the exterior pressure on magma (solution of water vapor in a silicate melt) is reduced to a greater extent than the pressure of the solved gas components in magma. If it is assumed that at a certain time the pressure of the solved components has exceeded the pressure exterior in consequence of one or more reasons (ascending magma, gap formation, crystallization), the gaseous solution in the silicate melt becomes supersaturated. Lava begins to boil when few steam bubbles are formed. If many bubbles are formed they will unite. If this phenomenon becomes general lava is disrupted into small pieces of liquid or glass. If, in addition to that, the pressure in the bubbles is high enough, an explosion takes place the amount of which will considerably depend on the re-

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